**Title**

OpenAT Switch Latch

**Subtitle**

A switch adapter that allows a momentary assistive switch to act as a toggle switch.

## Device Specifications

Build Time:

< 1hr

Cost:

$50-$100

Stage: Recently Added

Skills:

Need: Electronics, Soldering, 3D Printing, Custom PCB, Engineering

Disability: Mobility / Physical, Cognitive / Learning

Difficulty: Intermediate

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Usages: Aids for Daily Living, Environmental Control, Recreation and Leisure, Computer Access

Type:

Designer: Makers Making Change

## Device Details

### Overview

### The OpenAT Switch Latch converts a momentary switch input into a toggle switch output. The device was developed as several assistive switch users requested the ability to control lights and other devices in a semi-permanent manner, but do so, utilizing their preferred momentary assistive switches.

### The intended users of the OpenAT Switch Latch are those who require a momentary switch to act as a toggle switch (e.g., latched switch), allowing the user to turn on for an extended time with a quick tap, and off again with another quick tap.

### Usage

### To setup the Open AT Switch Latch adapter, a momentary switch is plugged into the 3.5 mm jack marked 'Input' and the device to be controlled is plugged into the 3.5 mm jack marked 'Output'.

### To use the device it must be powered on by sliding the Power Switch towards the left to the On position. When the assistive switch is activated, the LED indicator light will turn on and remain on, and the output device will be activated. When the assistive switch is activated again, the LED indicator light will turn off and remain off, and the output device will be deactivated.

### Cost

~$50.54 ($20.54 Components and 3D prints; ~$30 for 5 custom PCBs)

### Build Instructions

The OpenAT Switch Latch consists of 3D printed parts, a custom PCB, and electronic components. All documentation including an Assembly Guide is available at the GitHub repository.

#### Skills Required

* 3D Printing
* Soldering
* Custom PCB

#### Time Required

* 3D Printing Time: 2 Hours and 40 Minutes
* Assembly Time: 1 Hour

#### Tools

* Soldering Iron and 60/40 electronics solder
* Needle nose pliers
* Side cutters
* Medium Phillips screwdriver

#### Components

1. 1X 470K Resistor
2. 1X 22K Resistor
3. 1X Texas Instruments CD74HC73E Flip-Flop
4. 1X 1uF Capacitor
5. 1X #4-3/6" Pan Head Screw
6. 1X OpenAT-Switch-Latch PCB (Printed Circuit Board)
7. 1X CR2032 Battery holder
8. 2X IRLD-110 MOSFET
9. 1X 10K Resistor
10. 1X 0.1uF Capacitor
11. 2X SJ-3566AN 3.5mm Audio Stereo Jack
12. 1X Slide Switch
13. 1X LED (green, super bright)
14. 4X #4-3/8" Pan Head Screw
15. 1 X CR2032 Battery

#### 3D Printing

1. 1X 3D Printed Enclosure Top
2. 1X 3D Printed Enclosure Bottom
3. 1X 3D Printed LED Spacer
4. 1X 3D Printed Switch Slide
5. 1X 3D Printed Battery Cover

#### Custom PCB

This design utilizes a custom PCB. Five boards (minimum quantity) can be obtained for approximately $30 CAD (shipping included).

### Design

The PCB was designed using Autodesk EAGLE, and the enclosure was designed using Autodesk Fusion 360.

### Attribution

Designed by Makers Making Change

* Circuit design by Derrick Andrews, Makers Making Change
* PCB Layout by Milad Hajihassan, Makers Making Change
* Enclosure design by Jake Mclvor, Makers Making Change